CONTRACT EMPLOYMENT: WHAT ARE THE ALTERNATIVES?

Phillip James Spence

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

CONTRACT EMPLOYMENT:
WHAT ARE THE ALTERNATIVES?

by

Phillip James Spence

December 1975

Thesis Advisor: J. K. Arima

Unclassified
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Contract Employment--What are the Alternatives?		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis; December 1975 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Phillip James Spence		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		12. REPORT DATE December 1975 13. NUMBER OF PAGES
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) Naval Postgraduate School Monterey, California 93940		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Military attitudes
Military contracts
Military enlistment/reenlistment

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Military contractual employment is viewed from two aspects. Firstly, attitudes, survey results, and previous studies are examined to determine individual attitudes to contractual terms. Secondly, models of contractual terms are examined to determine effectiveness matched against cost. The study also acknowledges other elements that affect contractual employment, such as vocational choice, legal environment and

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE
S/N 0102-014-6601 |
(Page 1)

Unclassified
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

social norms prevailing. The study concluded that although there are strong arguments for reducing or eliminating contracts (for enlistment/reenlistment incentives), the necessity to recoup training and equipping costs remains an overriding consideration. To this end a minimum term of initial enlistment remains necessary.

Contract Employment--What are the Alternatives?

by

Phillip James Spence
Captain, Royal Australian Army Ordnance Corp
B. Comm., University of Melbourne, 1972

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
December 1975

ABSTRACT

Military contractual employment is viewed from two aspects. Firstly, attitudes, survey results, and previous studies are examined to determine individual attitudes to contractual terms. Secondly, models of contractual terms are examined to determine effectiveness matched against cost. The study also acknowledges other elements that affect contractual employment, such as vocational choice, legal environment and social norms prevailing. The study concluded that although there are strong arguments for reducing or eliminating contracts, (for enlistment/reenlistment incentives) the necessity to recoup training and equipping costs remains an overriding consideration. To this end a minimum term of initial enlistment remains necessary.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION

The questions confronting many military managers today is how to fulfill their military manpower commitments and yet still maintain the effectiveness of this manpower as a combatant element.

To this end the military manager in a "draft-free environment" has become increasingly prone to correlate higher manpower accessions and retention with increased pay and allowance or reenlistment bonuses (disregarding for the moment economic aberrations as witnessed in 1974/75). The difficulty with this pecuniary eyesight is that it ignores a current of unrest which permeates throughout the military. The unrest is not necessarily quantifiable, but it represents a manifestation of the individual's urge for increased recognition and assumption of responsibility in determining one's own future.

This movement for greater "fate control" manifests itself in many forms, both within the military and outside it. Within the military it manifests itself in the movement toward unionism, albeit it uses pseudonyms to disguise its actual form [1], and instances of Superior Court hearings, where there have been applications for rescission of military contracts of employment on grounds of the military's failure to comply with recruitment promises.

The effect of the individual insisting on greater liberalism in the employment scene necessitates examination of the

key elements of military employment. By the use of ombudsmen, unions, and other forms of representation and the implementation of human resource management programs and several other insight programs, the military hopes to negate dissonances. All of these are superficially dealing with the problem of lack of fate control. The real problem still appears to remain that an individual will rebel psychologically against the strait jacket of a fixed-term contract even though his ultimate term of duty may not be functionally related to his dissonance.

To confront the problem of lack of fate control there has to be an implicit acceptance that perhaps several long-vaunted pillars of personnel administration are not only non-motivators but also could be uneconomical.

This study, by examining initial enlistments and first reenlistments, will attempt to show the factors that affect the enlisted man in the prerecruitment, and first enlistment stages. The implications for military contractual employment of legal, social and motivational factors will also be taken into account. To depict the situation, models will be discussed. The most important will be a model of contractual length represented by cost and effectiveness, both elements being of necessity limited by sample data.

The underlying theme of the study is to examine the realities of the military society. A quotation from Ayn Rand [2] effectively synthesises this theme:

To improve anything one must know what constitutes improvement - and to know that one must know what is good and how to achieve it - and to know that one must have a whole system of value judgements. How are these values to be selected except by gaining knowledge and tuning in on people.

II. ELEMENTS IN THE DILEMMA

With the advent of the All-Volunteer Force, and at the same time defense budget constraints, a necessity arose to maximize utility of the manpower presently within, or intending to join, the military. Reclassifying military positions into civilian status is admirable only if it does not detract from the original object of the military, i.e., to function effectively as a combatant force. Random "civilianizing" has two manifest elements, firstly, of derogating the military role, and secondly, creating parity dissatisfaction between military and civilian occupants of virtually identical positions. The additional compensation necessary to reimburse the military member for his loss of freedom vis-a-vis the civilian may be economically prohibitive.

It is prudent at this point to review the tenents of military manpower planning, its effect on both the military and the civilian environment, and its behavioral, psychological, sociological, and economic implications.

Manpower is nowhere more critical than in the military. During wartime control, allocation and training becomes mandatory and is accepted unreservedly. However, in peace the needs are still paramount, but the commitment is generally less than optimal.

In a democracy manpower policy must balance direction against initiative, control against freedom, and public good

against personal desire. It must do this while still maintaining the overall objective to benefit the people by raising standards and stimulating economic growth without infringing basic freedoms or denying respect for the dignity of the individual.

The history of the U.S. military is an example of an attempt to a balanced approach moving from a small proficient regular military, supported by a well-organized Reserve and National Guard, of the 1950's to the globally committed U.S. forces of the 1970's. The development of the military in size has needed a corresponding growth in skilled and educated manpower both intelligent and technically competent to meet the demands of modern weaponry.

The military planner must consider the impact of society upon the military. The mere concept of a military in democratic society itself constitutes an anachronism, between freedom and bondage, liberalism and authoritarianism.

It is vital to recognize that the society that spawns the military should also have the power to control the might; similarly, the rights, freedoms, and liberties of this population should not be denied or circumscribed because an individual decides to make a career of the military. If passive acceptance of arbitrary control is anathema to a thriving democracy, then why should it be so readily subscribed to as the modus operandi for the military. To avoid alienation from the population and creation of a mercenary force, geared only to pecuniary incentives, constant revaluation is needed of

the psychological position of the military in the social structure.

This statement, however, resolves nothing for the military planner; the problem he still has to wrestle with is what is the optimal time period to have an individual initially enlist or reenlist. To determine this, in an operating atmosphere, there is a need to first determine what the relevant factors are that influence the individual in his choice of a military career and what additional factors have to be acknowledged to ensure a return to the military (assumed productivity or effectiveness) is maximized. Finally by the integration of these two streams there should be revealed a range of preferred employment contract periods.

Specifically, there are three factors to be aware of. These are:

1) Attitudes towards military employment
2) Individual's stages of development
3) Cost-effectiveness of any course of action and the benefits it will yield the military.

The above factors could be viewed as constraints, although some are qualitative; the need still arises to mentally attribute a weighting to each of them. This weighting in turn is a function of the area under consideration, either enlistment or reenlistment, and the social and economic climate prevailing at the time.

A. ATTITUDES TOWARDS MILITARY EMPLOYMENT

Attitudes towards military employment are shaped by many factors--social acceptability, legal standing and career prospects being but a few. The important thing about attitudes is that they will vary depending upon the situation. Consequently, what is an inflexible attitude of an 18-year old towards a first-term enlistment contract may be completely reversed by the time he reaches 22 years of age and is due to reenlist. Ignoring this phenomena could result in the provision of incentives to change attitudes that have already altered.

For our purposes, attitudes held by potential first-term enlistees and potential first-term reenlistees are relevant. By looking at several studies conducted it should enable these attitudes to be contrasted and the relevance they have to setting contract length gauged. Other attitudes, not so easily gauged and certainly not researched, are those caused by legal inequities and the non-use of performance as a basis for promotion. An attempt at relating these to the issue of contract length will be made.

1. Enlistment

Most work on enlistment attitude shaping has been to do with incentives.

The use of incentives as a device to change potential enlistee attitudes starts with the paradigm that if you offer people the opportunity to gain specific objects or objectives which they value, they will change their behavior in order to realize these values. In this way behavior theoretically can

be "shaped" or "maintained" in the manner desired by the individual controlling the value reinforcements.

There are implicit assumptions in this approach. One is that the incentives being manipulated actually represent appreciable values and constitute sources of attraction to the target population involved. Obviously, if they do not they lose their effectiveness.

The second assumption is that more incentives are better than less. Therefore, if the opportunity to realize values will serve to change behavior, then the more "value opportunity" that is provided (in the sense of a greater amount of specific values or a greater variety of values) then the greater will be the change in behavior that would take place in the individual and the correspondingly greater the population that would be affected.

The final assumption is that the effectiveness of an incentive is independent of the context in which it is presented and utilized. Evidence has shown that this is not necessarily a true assumption [3]. As a means of determining the effect of incentives on enlistment intention, a study was carried out for the American Institutes for Research by Frey [4]. The study involved the sampling and analysis of reactions of American young men to sets of incentives that might be used by the Navy to attract recruits. The formulation of the incentives was done in consultation with Navy personnel who perceived the incentives as viable in the All-Volunteer Force environment.

The study was a follow-on from Glickman [5] and Korman [6]. It also used the results of the Gilbert survey [7] on youth attitudes. Although it was found that different incentives generally hold different values for men from different socio-economic backgrounds, the most notable factor that emerged from the study was the finding, in a factor analysis, that 48 percent of the common variance was accounted for by a desire for fate control [4].

Using the results of several other experiments, some of the more accepted notions of enlistment can be severely questioned. One experiment was a nationwide sampling of 16-22-year olds stratified within geographic regions.

The experiment offered incentives in sets of singles, doubles, and triples. Its main conclusion was that comparative attractiveness was not significantly different between the sets. In every case the double or triple incentive set was not more or less attractive than the single set.

The 17 incentives used and the responses can be found in Table I. A comparative attractiveness of some of the incentives is shown in Figure 1. It was determined that although the double incentive packages rated higher in absolute terms (in some cases), in no case was the difference from its best single component greater than could be accounted for by chance.

Even when using the approach of increasing the absolute magnitude of single incentives--e.g., increasing the enlistment bonus from $1,000 to $3,000--it was found there was no significant difference between the results (Figure 2)[4].

TABLE I

Ratings of Experimental Incentives for Enlistment

	Incentives	Mean Rating*	Standard Deviation
1.	Get out after 3 months if not satisfied	3.29	1.22
2.	$1,000 enlistment bonus	3.21	1.37
3.	Performance bonus up to 25% of base-pay	3.12	1.24
4.	2 Years college after 4 years of active duty	3.06	1.14
5.	4 Years college after 4 years of active duty	3.03	1.14
6.	Choice of home post after 2 years of duty	3.03	1.13
7.	Special job training to start civilian life	2.95	1.16
8.	20-Year retirement with 3/4 pay	2.93	1.16
9.	Assign women to ship duty	2.93	1.07
10.	2 Months of educational leave per year	2.88	1.02
11.	2 Year enlistment period	2.88	1.09
12.	$3,000 Enlistment bonus	2.81	1.03
13.	Opportunity to change job specialty after 1 year	2.76	1.04
14.	Naval-pay and benefits would be the same as civilian	2.76	1.12
15.	Reduced educational requirements for officer training programs	2.71	1.31
16.	Greater sea duty-pay differential	2.70	1.03
17.	15-Year retirement at half-pay	2.60	1.05

* The rating scale ranges from 1 to 5; the higher the value the greater the attraction for enlistment.

Source: Frey, Jr. et al. [4]

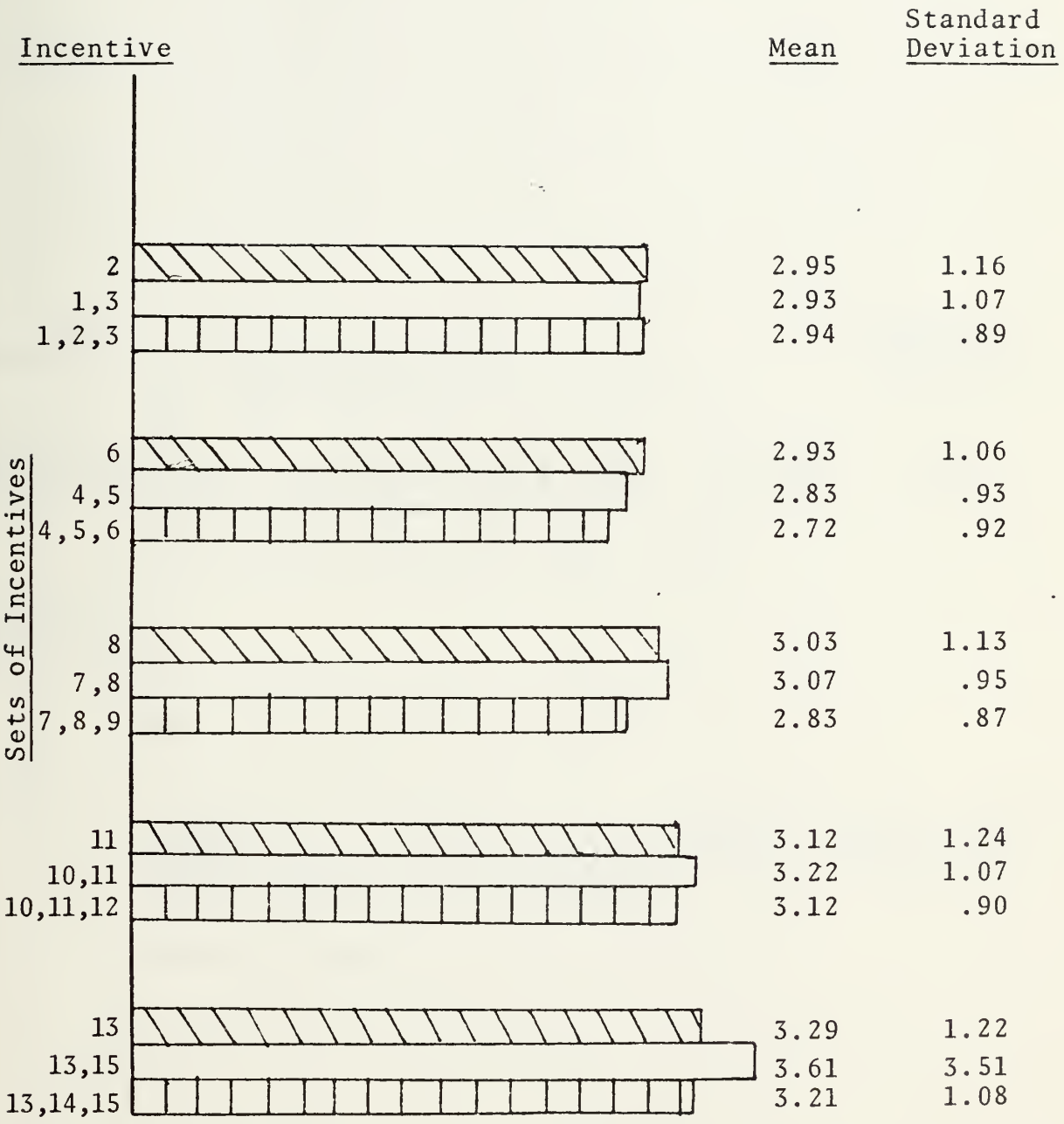


Figure 1. Relative attractiveness of the Best Single Incentive, the Best Double Incentive and the Best Triple Incentive Package within Each Set of Incentives.

Source: Frey, Jr., et al. [4]

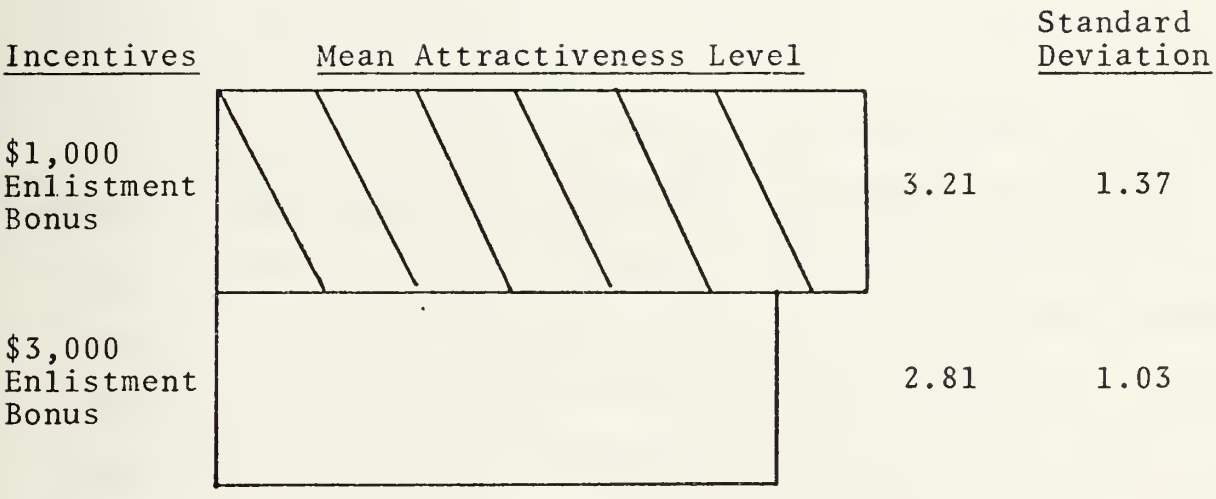


Figure 2. Relative Attractiveness of a $1,000 Enlistment Bonus Compared to a $3,000 Enlistment Bonus. The ratings range from 1 to 5; the higher the value the greater the attraction for enlistment.

Source: Frey, Jr., et al. [4]

The listing of overall attractiveness of incentives (by their mean going from the highest to lowest) indicates that not only is the top item non-pecuniary but also the top five items emphasize mainly themes of self-determination and educational opportunities (see Table I).

A further sophistication was achieved by eliciting intent if the incentives were adopted. Once again the most positive response was for a $1,000 enlistment bonus and the option to get out after three months if not satisfied with the military [4].

a. Study Conclusions

Although the investigators acknowledged that the results would appear to be contrary to common sense, it was apparent that there was a need to turn to psychology for answers. The first conclusion was that the individual could perceive the increasing of incentives as a cumulative bribe put forward to trick an individual into enlisting. The attitude that it is "too good to be true" quickly put a limit on the manipulation of this incentive strategy.

A second aspect was that the high incentive violates the equity norm. That is, people will work harder when they believe they are being overpaid. If the incentives can be categorized as overpayment, then the implicit need to demonstrate exceptional effort could be counterproductive to enlistment.

Demographically the difference in the study showed predictably that high school students from low income families

were more susceptible to incentives of pecuniary nature--e.g., $3,000 bonus--than were college students who showed a greater leaning towards a package of three months' enlistment option and further educational training after completion of enlistment.

The overall result indicated that today's youth places a much higher value on the shaping of his present and future activities and life style, this attitude being shaped and conditioned by what he has seen, learned, and come to expect in civilian life. It was obvious from the study that fate control incentives and pecuniary rewards are not opposites. To have a reasonable recruiting program there is a need to have a mixture of incentives.

This movement by youth for a recognizable societal role has been summarized by Levinson [8] as "we are in the midst of a world-wide social reevaluation, the central thrust of which is the demand of all people to have a role in their own fate."

The implications for military manpower planning are obvious, to achieve the enlistment numbers consideration might have to be given to providing greatly reduced contract periods or provision of "early out" if dissatisfied after a minimum time instead of constantly boosting incentives.

Another study conducted by Glickman [5] confirms Frey's findings. Glickman followed the individual through his first enlistment and recognized the psychological adjustment the individual would be undertaking.

Glickman in his study depicted the development of the individual through a series of steps (Figure 3) from the career motivation and socialization process through to an accommodation stage where the individual makes cognitive reappraisals of his position.

The phase I preliminary socialization process may crucially affect the later development of career motivation. Generally the recruit has an idealized view of the military, from the position of masculinity to a tacit belief that efficiency, discipline, and good leadership are inherent in the military institution.

The second phase is depicted as the recruit training and the individual's first duty station. At this stage career motivation is seen as a function of the individual's experiences early in his tour, his personal characteristics, and the kind of preliminary socialization influences he was subjected to before he enlisted. It is at this point where the mass of expectations and reality meet and that the first reality shock may start to appear. Hughes [9] terms this as being "reality shock." Glickman uses the term "disconfirmation."

This disconfirmation relates generally to assignment of schools, notwithstanding the point that the initial choice of school was generally a result of interaction with the recruiter. Non-provision of such schools generally resulted in dissonances.

While loss of school choice may represent the first disconfirmation for the recruit, it may have reverberating

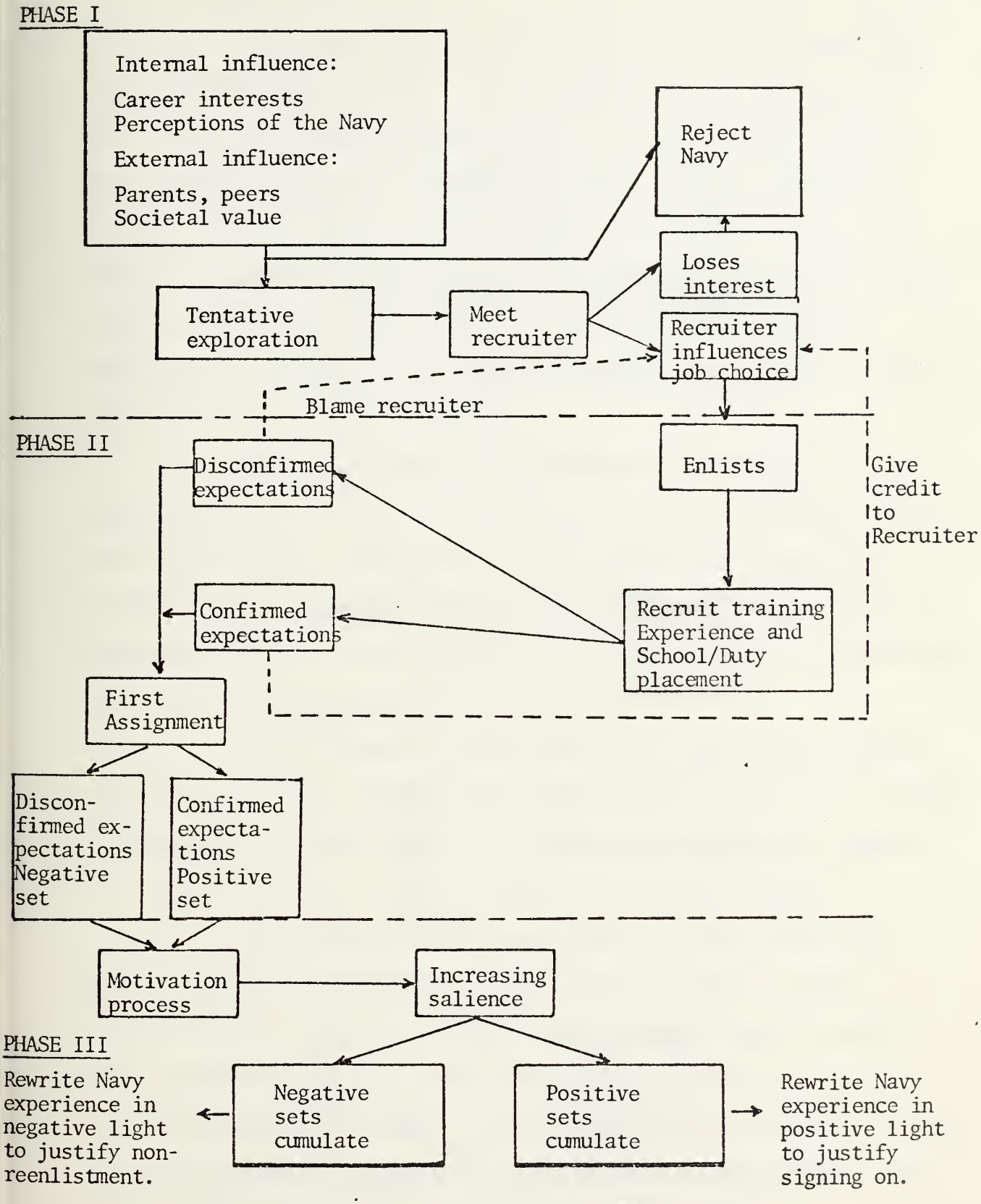


Figure 3. Career Motivation and Socialization Process Model.
Source: Glickman [5]

effects on the individual's perceptions of the military and his continuing motivation. This, however, is not the only area where negative patterns appear. Perceptions of leadership imbued in recruit training may be quickly tarnished by reality contrast with operating units. Glickman [5], in his study, uses Weitz's [10] theory to support the view that more accurate job expectations (i.e., reality conditioning by recruiters including knowledge of negative job aspects) would lead to a lessening in turnover.

The third phase, in Glickman's terms the accommodation phase, is when the individual tries to accommodate his life style to the requirements of the military (Figure 3). In this phase individuals who have entered with negative sets generally have this set reinforced. Reinforcement is provided in a self-fulfilling prophecy approach.

The attempt by Glickman was to show that individuals when enlisting undergo an adjustment process; the argument strongly put is that false job expectations generate negative attitudes when these expectations fail to materialize.

The relevance contractually is that there are obvious points in Glickman's model--i.e., Phase II where flexible use of contract periods might remove some or all of the negative dissonances (the individual knowing he can exercise the right to resign). At very least it may allow removal with much greater expediency a dissatisfied element from the military who represents an administrative burden.

As discussed earlier, the difficulty with attitudes is their general lack of continuity as the individual

matures, the contrast between the first-term enlistee and the reenlistee highlight this.

2. Reenlistment

Previously examined were motivational factors that would induce the individual to enlist, from a list of incentives (singles or couples), to the stages of development that the recruit will process and the dissonances or patterns he will develop on the way. Reenlistment itself is a product of socio-economic dynamics, economic recession, international crises and higher educational goals. All of these can strengthen or weaken the attractiveness of the military as a career prospect. Even the passage of time provides different weightings on factors of retention, such as pay, education and promotion.

Problems also occur demographically. As the population ages, generally the proportion of the population in the present prime military age group will decline. This indicates that first-term enlistees will provide a smaller percentage of future military manpower [11], conversely, individuals who have the potential of enlisting two or more times will comprise a larger percentage of possible manpower.

Greater understanding of the reenlistment decision process is desirable, not just for the cost benefit analysis reason, but also for use in career planning.

A study by Frey [12], following on from his study, "Experimental Incentives--More is Not Better," attempted to evaluate the individual's reactions to a list of proposed

retention devices, this being a similar approach to the one followed earlier where incentives were lumped together to test the assumption that increased incentives will have a behavioral impact. The President's Commission on the All-Volunteer Force gave credence to this assumption when it stated that a 10% increase in basic military pay would result in a 12.5% increase in the enlistment rate, while a 40% pay raise would bring a 49% increase in enlistees.

A questionnaire was submitted to first-term enlisted personnel and once again conclusively demonstrated that more is not better.

Of the incentives tested, most support was for those emphasizing self-determination although the importance of traditional incentives such as retirement benefits also rated highly. One conclusion from the study was that, with the interaction of today's military man with his civilian environment, changes in the military way of life are constantly being shaped by changes in the nature of civilian life. Passive acceptance of arbitrary constraints are no longer the norm and the latter is dysfunctional when related to enlistment intention.

The implication gained from the study was that greater cognizance must be given to the psychological climate rather than purely tangible. In particular, recognition of the vocational development of the individual as he learns more about himself and the world will benefit the military by allowing the individual to make "course corrections."

The adjusted individual would be of greater benefit both with respect to productivity and his morale.

An extremely high proportion of respondents in the study (51-54%) opted for a three-months' notice to quit option. The study suggested prorating of the reenlistment bonus as a means of overcoming financial aspects to ensure that the reenlistee receives only what he earns. Use of a three-months' notice to quit might ultimately assist in the upgrading of the quality of personnel wanting to reenlist. Another factor that appears with this option is the ease of decision (e.g., only three-months' commitment).

The point that is easily obscured is that a person completing a four-year enlistment is more likely to reenlist than is the two-or three-year enlistee, thus the reduction of enlistment time to three months could encourage the individual to continue serving more by default than by real intent. As he gradually perceives his increasing investment in the military growing, and the handicaps of readjustment to civilian life becoming more tangible, he would be more likely to stay till the minimum retirement time. The study claims that the loss from this option if exercised would be minimal; the main advantage has been to the individual psychologically with his obvious fate control reinstated. A longitudinal study is the only solution to an option of this type.

The conclusion from the reenlistment attitudes is that maturation and experience appear to generate a greater need for fate control. Although it is not desirable to reenlist

all initial first-term enlistees (contrast short-term to career military) the objective should be to have as many as possible first-term enlistees "applying" to reenlist. This would provide greater selectivity and hopefully an upgrading of the calibre of retained personnel.

If the use of a three-months' notice to quit option would achieve this, and would generate positive attitudes to reenlist, then it may be worthwhile.

Attitudes are not developed in a vacuum. The impact of the legal structure is becoming more evident as questions are raised concerning constitutional and contractual rights of potential enlistees and serving members.

3. Legal

The effect of this is reflecting mainly in first-term enlistees at present; this group is generally questioning the validity of military contracts terms where they have been used by a recruiter to induce enlistment or where they have been subsequently varied to the prejudice of a previous agreement. If the trend continues it is conceivable that the subsequent legalities that arise could result in radical changes in contractual liability regardless of the military's anxiety for them.

An important factor in many enlistees' dissonances is the effect of the recruiter. This agency is regarded as generating a host of unmet expectations for a percentage of the serving population. They consider that a serious discrepancy exists between what they expected to happen in the military and what actually occurred.

The promises of choice of schools and specific postings have already been the basis of several law cases heard in U.S. Superior Courts. Perhaps the stage is being set for a complete legal rethink of military contractual employment.

The premise underlying military contracts is that the law is biased towards the employer, the individual will only be released at discretion of the military authorities, or at expiration of his tour, whichever arrives first. There are recent examples where this interpretation of the contract law has been questioned.

In the case of Burchinall et al. vs. Secretary of the Navy, District of Hawaii 74-261, 18 Dec 1974. The petitioner, with several other members of the same rate, requested that his contract be declared null and void and that he be given release from the Navy. The grounds for the action centered around an oral statement by a recruiter at time of recruitment. The court rejected Burchinall's claim but the decision by Justice King in that case created an interesting precedent; his obiter dictum comments were "while Burchinall stated that his recruiter mentioned Sealab and similar projects, he does not claim that he was promised (italics inserted) assignment to such projects."

Read literally, this could mean that if a prospective recruit can inveigle a recruiter into making a promise (oral or written) then it becomes a contractual term and presents ground for action if not complied with.

There is some consolation in the case of Parker vs. United States where an enlistee sued the Navy for a bonus

promised by a recruiter. In that case it was held that the government cannot be held liable for promises made by its personnel.

This consolation provides only temporary relief. The matter was resurrected in an action brought by Carini vs. United States of America, 74-88-NN,U.S. District Court, Newport, 17 Jan 75, against the Secretary of Defense by a group of petty officers requesting release from their contract on the grounds of the government's failure to fulfill the plaintiffs' enlistment contracts.

The basis of this case was that the petty officers extended their service for an additional 24 months to undertake Nuclear Field Program or Advanced Electronic Training. At the time of their signing, U.S. Code 37 USC 308 (g)(1968) was in effect (referred to as the Variable Reenlistment Bonus) guaranteeing all possessors of critical skills, who extended or reenlisted, that they would be paid up to four times the reenlistment bonus.

A month before the petty officers' extensions were due to begin the Variable Reenlistment Bonus was replaced by a Selective Reenlistment Bonus. This drastically reduced the amount initially entitled and became the basis of the course of action.

The decision in the case by Judge Kellam touched on many issues. He did, however, confirm the applicability of contract law and the binding effect of the bargain as set out in the initial enlistment contract. He at the same time

acknowledged the power of Congress to affect the status of an individual in the process of raising an Army or Navy pursuant to Article I, line 8, of the United States constitution using the support of cases such as Schultz vs. Clifford, 303 Supp 963 (DMinn 1968). The decision finally went against the government on the tenuous precedent that Congress had no power to alter a contract purely for fiscal reasons.

The decision did not greatly disturb established contract law; what it also did not do was to preclude further actions on a contractual law basis. Although the precedent set by Carini will have to be of necessity restricted to its facts of fiscal deprivation there is still sufficient evidence available to support the view that a promised inducement during enlistment if correctly recorded and subsequently not complied with could result in a justifiable legal action.

Sober analysis of the facts makes it clear that whereas previously contractual terms employed in the military were beneficial to the employer they have now more of a burden. Questions of their validity and applicability will continue to arise.

B. INDIVIDUAL'S STAGES OF DEVELOPMENT

Apart from individual attitudes and legal problems there is a need to be aware of the individual as he matures within society. In this regard, to design an "iron clad" contract of employment of such length that the individual would be "strait-jacketed" during his formative vocational development years it could prove inhibiting for the individual and

result in a loss both in morale and productivity for the military.

When we examine vocational interests of the individual it must be recognized that at no stage can the individual be regarded as stagnating. Super [13], saw this as a continuum of vocational development, from exploration to decline. He further added:

> Like social development, emotional development and intellectual development, career development has both distinctive characteristics which make focussing on it worthwhile and common characteristics, which reveals it as one way in which the general development of an individual manifests itself.

Vocational choice is not a closed-door affair. A model titled Career Maturity Inventory is a longitudinal study being carried out by McGraw-Hill and it concentrates on two variables, career choice competencies and career choice attitudes. Their findings to date have been that vocational behavior does mature over time, that it is monotonic in effect, and that measures used to determine earlier development must be meaningful--i.e., relevent to age of maturity and ability to differentiate age and grade levels (when applied to schools).

There is no one accepted view of vocational choice, the conflicting theories being only matched by the multitude of variables that impinge upon an individual in his maturation process.

A theory by Roe [14] was that the three important components in vocational choice were the concept of psychic energy related to early childhood, Maslow's theory and genetic influences. This conclusion was mainly the result of examining

certain discrete populations, such as scientists, and using retrospective questioning. The individual's vocation as a consequence of parental child-rearing habits probably has some validity, but most later studies were critical of the methodology employed in the study.

Holland [15] took the view that career choice was an extension of personality, that people project views of themselves and the world of work into occupational titles. The use of a "Modal" personality was depicted as being either realistic, intellectual, social, conventional, enterprising or artistic. The level of aspiration with this Modal personality is dependent upon intelligence and self-evaluation.

Inadequate self-evaluation, the lack of clear ideas of development, heirarchical family pressures, and economic conditions were all factors that were not encompassed in the study.

The Ginsberg, Axelrad and Herma [15] theory was the result of an investigation into the character of events influencing vocational selection. Vocational choice was seen as an irreversible process occurring in reasonably clearly marked periods. It was characterized by a series of compromises made by the individual between his wishes and possibilities. The theory characterized the states of vocational evolution: fantasy, tentative, and realistic. The realistic period is of most interest to our study. It is generally in the age group 19-21 and is further broken down into exploration and crystallization stages. The former represents the stage of integration of likes and dislikes relative to his capability,

relating them both to society's and his own values. The crystallization stage is the choice of some vocational pattern based upon successes or failures during the exploration phase. In the crystallization stage the individual receives feedback within a highly realistic environment. The greatest value of this theory was seen to be its ability to identify the individual's stage of development.

Super [16] adopted a developmental self-concept theory. In this theory he proposed that a person striving to implement his self-concepts will choose the occupation most likely to permit him self-expression. This, in turn, is a function of the individual's stage of life and development. Super characterized vocational development into five groups, which were:

1) Crystallization of vocational preference: 14-18 age group.

2) Specification of vocational preference: 18-21 years. Narrowing of general career direction into a specific one with necessary steps to implement decision.

3) Implementation of vocational preference: 21-25 age group.

4) Stabilization: 25-35 years. Settling into career, appropriateness of choice.

5) Consolidation of status: 30-40 years. Firm establishment of skills and seniority to generate a secure and comfortable vocational position.

Super took another approach to the problem of vocational choice. In this other study [13] he attempted to characterize the effect on individuals of economic factors. By examining supply and demand fluctuations over a period of time, he concluded that, when a college graduate tried to enter a profession where supply exceeded demand, either a permanent

change could occur in the individual's plans or, for those who do enter the profession, lower career prospects result. Lack of promotion could lead to job dissatisfaction and to a greater mobility of labor than expected.

Finally, Caplow [17] defined two anchor points to fix a person's occupation. One is hereditary occupation and, at the other extreme, the exclusive result of the individual's characteristics. Factors of hereditary acquisition of capital and aspirations of the parents for the offspring to achieve more will be overwhelming factors. The latter will depend upon education, educational opportunities, or the view of the individual's society towards education and opportunity.

With the perspective of vocational theories in mind, it is fairly obvious that there is no one theory that can solve the vocational dilemma. What can generally be determined is:

1) That the average military enlistee/reenlistee will be between 18-24.

2) During that period he will be crystallizing his career choice, narrowing from the general down to the specific.

3) At this stage the individual is amenable to feedback, proper development could encourage the emergence of the Modal personality, and the emphasis on self-evaluation by the individual.

4) The social environment of the potential enlistee or new enlistee is his peers and usually school associates; as such, these areas should be cultivated as far as possible to portray the realistic content of military life as a career.

5) Identification of the vocational stage of development and relating that to hereditary background and prevailing social and cultural conditions could assist in eliminating the training of a portion of the population that would provide only marginal value to the military.

6) Provision of sufficient diversity in career pursuits, with obvious fluidity between rank and trades to ensure that the individual, when he settles on his vocational preference and moves into the implementation stage, is not thwarted and consequently does not become dissatisfied and add to the avoidable turnover.

7) Recognition that in using contracts of employment they should be designed to forestall the frivolous attempt at discontinuation of service but should not irreparably tie the individual to a way of life or vocational following which is stultifying his development. The loss to the individual and the potential loss for the country as a whole far outweighs the expense unrecouped.

C. COST-EFFECTIVENESS STUDIES

These studies are being used to contrast the variation of contractual terms of employment from a quantitative aspect as compared to the previously discussed qualitative constraints of attitudes and stages of development.

Like the foregoing studies, they have their limitations; however, they exhibit a common need for the contract length to be considerably longer than appreciated in the qualitative studies. This is more readily apparent in the first-term enlistment situation, where initial training and equipping costs are to be recouped, than in the reenlistee situation.

The studies work on the premise of a contract length of some duration, the length being a function of what the military wishes to maximize or minimize--i.e., maximize effectiveness or minimize cost.

1. Enlistment

Enlistment has two models worthy of examination. The first is a model that compares cost to effectiveness, equating the recruiting and training costs of an average soldier against

the effectiveness of the individual. The second model looks at a change of enlistment contract period to reduce fluctuations in manpower for training purposes, the aim being to reduce the cyclical pattern of shortages and overages of recruits. Both models are vitally concerned with contract term of employment but they are approaching the problem from different directions and with different objects in mind.

a. Model I

The model incorporated two aspects: one is the consideration of effectiveness of the individual over time, the other is the cost of the individual, cost being seen as the initial cost of recruitment, equipping and transporting the individual coupled with his pay and allowances for that period.

Formulation of the model requires the derivation of an equation for these two elements and the comparison graphically. For simplicity, the population to be examined are infantry soldiers recently completed Basic Combat Training and Advanced Infantry Training but having no previous unit experience.

Both elements in the model are considered over time (in this case, 36 months). The use of 36 months is justified by its present use and Congress restraints on any lower term.

The elements of the model are dealt with separately and then will be integrated to show their cumulative effect.

(1) Effectiveness. This term has many connotations and is difficult to define. What is effectiveness for one purpose may well be mediocrity for another.

The approach adopted was that effectiveness was represented by the infantry soldier able to perform certain specified functions.

These functions and the level of expertise required to be exercised by the infantry soldier, were judgemental criteria determined by practicing officers and NCO's.

Effectiveness was considered to be a cumulative device based on the learning curve approach; as an individual soldier acclimatises in his new unit he will theoretically become more effective. It is well to be aware of the history and limitations of the learning curve before placing undue reliance on the methodology used.

(2) Learning Curve. The learning curve is experiential and relative to its environment; as such many people claim it should be rather called a progress curve or experience curve. Regardless of title, learning remains the predominant factor: the more opportunities for learning that exist the steeper the learning curve becomes [18].

The learning curve concept emanated from the aircraft industry in WW II. One study conducted in the Curtiss Wright Corporation showed that an individual learns as he works, the more often he repeats an operation the more efficient he becomes.

The aircraft studies established one important fact: that the rate of improvement is regular enough to be predictable.

The pure learning curve is not a singular effort; it represents the collective efforts of many people to achieve a common task better. The view that will be adopted here of the learning curve is that there is an interaction of people engrossed with the concept of achieving an objective in a better manner. Without this approach the singular efforts of the individual could well be to no avail.

There are definite limits to the level of proficiency that any individual may reach in the performance of any particular skilled activity. The prediction of this limit is as valuable as the concept of the learning curve itself. Reasons for non-fulfillment in actual performance could be due to a change in motivation; people rarely work up to the limit their capabilities impose.

A test by the psychologist Snoddy in 1926 [19] illustrated this concept. In this test he used mirror-drawing as a skill learning task, the subject being required to trace with a pencil along a star-shaped path while viewing his hand in a mirror. On the basis of one trial a day for 60 days the performance was based on time and errors with a logarithm of performance plotted against the logarithm of trials. The result was a straight line fitting the data indicating that improvement in performance continued over the entire 60 days of practice but the rate of improvement slowed over time.

This study, as with others made in the area, came to the conclusion that performance in skilled tasks improves over long periods of time, with the rate of improvement reducing as practice continues. Ultimately the slope of the learning function depends upon the task being carried out.

The objective in this model is to take the concept of a learning curve and equate the level of effectiveness as perceived by infantry officers and NCO's over a period of time to observe how the function varies.

(3) Methodology Used to Determine Effectiveness. Effectiveness was gauged by use of a questionnaire approach. Two questionnaires were written, the first (Annex A) was put to a pilot study of five officers and NCO's at Fort Ord. The second questionnaire (Annex B) was put to a sample of 50 officers and NCO's at Fort Ord. The second questionnaire incorporated amendments and recommendations emanating from the pilot study of questionnaire I.

(4) Questionnaire Results

(a) Questionnaire I. For questionnaire I there were five respondents. The questionnaire was coupled with personal interviews. This resulted in amendments to questions 8, 9, 11, 12, and 13 of the original 15 questions asked. Examinations of the results of questionnaire I revealed the following character sketch of the individual soldier.

1) Weeks spent in BCT and AIT were 13-16 weeks.

2) Descriptively, the average soldier was seen as satisfactorily fit, he was unable to perform some skills taught and unable to perform some unit functions.

3) The effectiveness of the newly arrived soldier relative to his final effectiveness was seen as being 31-40%.

(b) Questionnaire II. This revised questionnaire was distributed within Fort Ord to 50 practicing officers and senior NCO's of the Seventh Infantry Division. The results were:

Returned questionnaires		27
Returned but incomplete	5	
Returned but unusable	1	
Usable	21	27

Although the questionnaires' completion was less than optimal, the returns were sufficiently detailed to allow a compilation of the data to take place.

Examining the 15 questions in the second questionnaire, the most relevant for the purposes of defining effectiveness was seen to be question 8 and question 13. In question 8 the individual was asked to define the level of average effectiveness of the individual. This was found to be:

1) Weeks spent in BCT and AIT, 13-16 weeks.

2) Descriptively, the average soldier was seen as being of average fitness, unable to perform some skills taught in BCT and AIT, but able to perform most unit functions effectively.

3) Upon arrival at the first unit the effectiveness of the average soldier relative to his final effectiveness was seen as approximately 40%.

In question 13 the individual was given effectiveness percentage figures from 10 to 100 in 10% increments. He was requested to fill in appropriate effectiveness estimates in months against these figures. The results of

question 13 are shown in Table II. These results enabled a regression analysis to be carried out on a time series basis.

(5) Derivation of Effectiveness Equation. The formulae used were:

$$\Sigma Y = A_o N + A_1 \Sigma X + A_2 \Sigma X^2$$

$$\Sigma XY = A_o \Sigma X + A_1 \Sigma X^2 + A_2 \Sigma X^3$$

$$\Sigma X^2Y = A_o \Sigma X^2 + A_1 \Sigma X^3 + A_2 \Sigma X^4$$

The constants A_o, A_1 and A_2 were determined and inserted in the equation.

To facilitate the use of this formula, 15 months was classified as the zero point. It then ranged down to 0 months and up to 30 months, thus developing the basis of the equation.

The equation derived was:

$$Y = 73 + 13.6X - 2.3X^2.$$

Details showing the derivation and the methodology employed are in Table III.

The equation is basically a trend line or forecast device, although reasonably accurate in the range 0 to 25 months, it starts to lose some of its reliability at 30 months. Fortunately, little need exists to use this extrapolation.

(6) Cost Element. The cost element is based upon individual cost of recruiting, process/travel, training and discharge costs. These costs are for an average individual. Some of these costs are amortised over time. Others remain constant.

TABLE II

Individual Responses to Question Asking Percentage Effectiveness Over Time.
(Question 13, Questionnaire II)

Percentage Effectiveness	Months											
	0	1 to 3	4 to 5	7 to 9	10 to 12	13 to 15	16 to 18	19 to 21	22 to 24	25 to 27	28 to 30	31 to 33	34 to 36
100											2	4	7
90							2	3	4	4	2		
80					1	3	4	5	3				
70				2	3	5	5	3					
60			4	5	5	1	5						
50		4	6	6	2	2	1						
40		5	8	5	1								
30		9	6	3									
20		14	3	1									
10	9	4											

Note: Responses for any percentage $\lesssim$ 21.

TABLE III

Derivation of Parabolic Least Squares
Equation of Effectiveness

Time Series (X)	Month	Percent (Y)	X^2	X^3	X^4	XY	X^2Y
-3	0	10	9	-27	81	-30	90
-2	5	40	4	-8	16	-80	160
-1	10	60	1	-1	1	-60	60
0	15	70	0	0	0	0	0
1	20	85	1	1	1	85	85
2	25	92	4	8	16	184	368
3	30	94	9	27	81	282	846
$\Sigma X=0$		$\Sigma Y=451$	$\Sigma X^2=28$	$\Sigma X^3=0$	$\Sigma X^4=196$	$\Sigma XY=381$	$\Sigma X^2Y=1609$

Note: Formula used:

$$\Sigma Y = A_o N + A_1 \Sigma X + A_2 \Sigma X^2$$

$$\Sigma XY = A_o \Sigma X + A_1 \Sigma X^2 + A_2 \Sigma X^3$$

$$\Sigma X^2 Y = A_o \Sigma X^2 + A_1 \Sigma X^3 + A_2 \Sigma X^4$$

Derived Equation:

$$Y = 73 + 13.6X - 2.3X^2$$

The important thing to note is that fixed costs--i.e., buildings amortisation--for the purpose of this study are excluded on the grounds that they lack universality.

The cost elements exhibit several facets, depending on the objective involved. Several of them could be viewed as fixed costs recoverable over the life of the asset--i.e., accession, initial medical, initial training costs. This would be theoretically correct; however, for purposes of decision-making it conceivably could distort the analysis. The objective in this study is to determine the shortest possible contract period. This can only be realistically ascertained if we have recouped initial costs as early as practicable.

Table IV shows the accumulation of costs incurred for the individual over a 36-month period. The cumulative costs, when characterized as a percentage of total costs, are matched against months. A regression analysis was carried out to predict the cumulative cost percentage. The resulting equation is:

$Y = 2.53X + 7.591$ where Y is the cumulative cost percentage and X is months.

This linear function realistically represents the commitment financially on the individual over a period of time, although several elements have been averaged and others treated as a fixed cost to be recouped early in the individual's employment, the cost equation remains reasonably representative. Details of cost computations are in Table V.

TABLE IV

The Cost of Equipping, Maintaining, Training and Paying a New Infantry Enlistee

Month (X)	Pay Allowances	Training	Leave	Total	Cumulative Percent (Y)	Cumulative Total
0	225			1033	4	1033*
1	450	452		902	8	1935
2	450	452	902	902	12	2837
3	450	452		902	16	3739
4	450	452		902	19	4641
5	475	452		927	23	5568
6	502		10	512	25	6080
7	507		10	517	28	6597
8	507		10	517	30	7114
9	507		10	517	32	7631
10	507		10	517	34	8148
11	507		10	517	36	8665
12	507		10	517	38	9182
13	565		10	575	41	9757
14	565		10	575	43	10332
15	565		10	575	46	10907
16	565		10	575	48	11482
17	565		10	575	50	12057
18	565		10	575	53	12632
19	565		10	575	55	13207
20	565		10	575	58	13782
21	565		10	575	60	14357
22	565		10	575	62	14932
23	565		10	575	65	15507
24	565		10	644	68	16151
25	634		10	644	70	16795
26	634		10	644	73	17439

Note: * Includes initial accession medical, process and travel costs.

TABLE IV (continued)

Month (X)	Pay Allowances	Training	Leave	Total	Cumulative Percent (Y)	Cumulative Total
27	634		10	644	76	18083
28	634		10	644	78	18727
29	634		10	644	81	19371
30	634		10	644	84	20015
31	634		10	644	86	20659
32	634		10	644	89	21303
33	634		10	644	92	21947
34	634		10	644	95	22591
35	634		10	644	97	23235
36	634		10	644	100	23879

Source: Department of the Army, Office of the Deputy Chief of Staff for Personnel [20]

TABLE V

Regression Analysis of Cost Data

Month (X)	Percent (Y)	$x=X-\overline{X}$	$y=Y-\overline{Y}$	xy	x^2	y^2
0	4	-15.3	-42.3	647.1	234.09	1789.3
4	19	-11.3	-27.3	308.4	127.69	745.3
6	25	-9.3	-21.3	198.0	86.49	453.7
8	29	-7.3	-17.3	126.2	53.29	299.3
10	34	-5.3	-12.3	65.1	28.09	151.3
15	45	-.3	-1.3	.4	.09	1.6
20	57	4.7	10.7	50.3	22.09	114.5
25	70	9.7	23.7	229.9	94.09	561.7
30	83	14.7	36.7	539.5	216.09	1346.9
35	97	19.7	50.7	998.8	388.09	2570.5
$\Sigma X=153$ $\overline{X}=15.3$	$\Sigma Y=463$ $\overline{Y}=46.3$	$\Sigma x=0$	$\Sigma y=0$	$\Sigma xy=$ 3163.7	$\Sigma x^2=$ 1250	$\Sigma y^2=$ 8034

Note: Formula used:

$$y = \left(\frac{\Sigma xy}{\Sigma x^2}\right) x \quad (1)$$

$$Y - \overline{Y} = b_o (X - \overline{X}) \quad (2) \quad \text{where} \begin{cases} y = Y - \overline{Y} \\ x = X - \overline{X} \\ b_o = \left(\frac{\Sigma xy}{\Sigma x^2}\right) \end{cases}$$

Derived Equation:

$$Y = 2.53X + 7.591$$

(7) Elements Integration. Graphs of the two equations for effectiveness and cost are depicted on Figure 4.

It would appear that up to 20 months the rate of growth of effectiveness appears to be steep and constant. Past 20 months the curve indicates a slowing in the rate of effectiveness growth till finally in the period 30 to 35 months the rate of growth virtually becomes zero, and the individual becomes as effective as he ever will be. Examining the cost curve over this same period indicates that at the 25-month period 70% of the total costs of the individual on a normal three-year term of enlistment are already foregone. The additional 30% of costs due to be incurred must be weighed against the rate of effectiveness growth of the individual for his remaining contract period.

Exogeneous factors, such as preconceived ideas of effectiveness equated to existing contract terms and decline in rate of effectiveness due to impending separation, have not been answered in this study. Suffice to say that there is an obvious rate of effectiveness decline with accompanying constant costs. The question to be asked is whether this should be allowed to remain unrecognized within our military contracts.

b. Model II

This model takes a completely different approach to the problem of contractual employment. Instead of attempting to define effectiveness and match it against cost, it takes the view that there is another cost element disguised

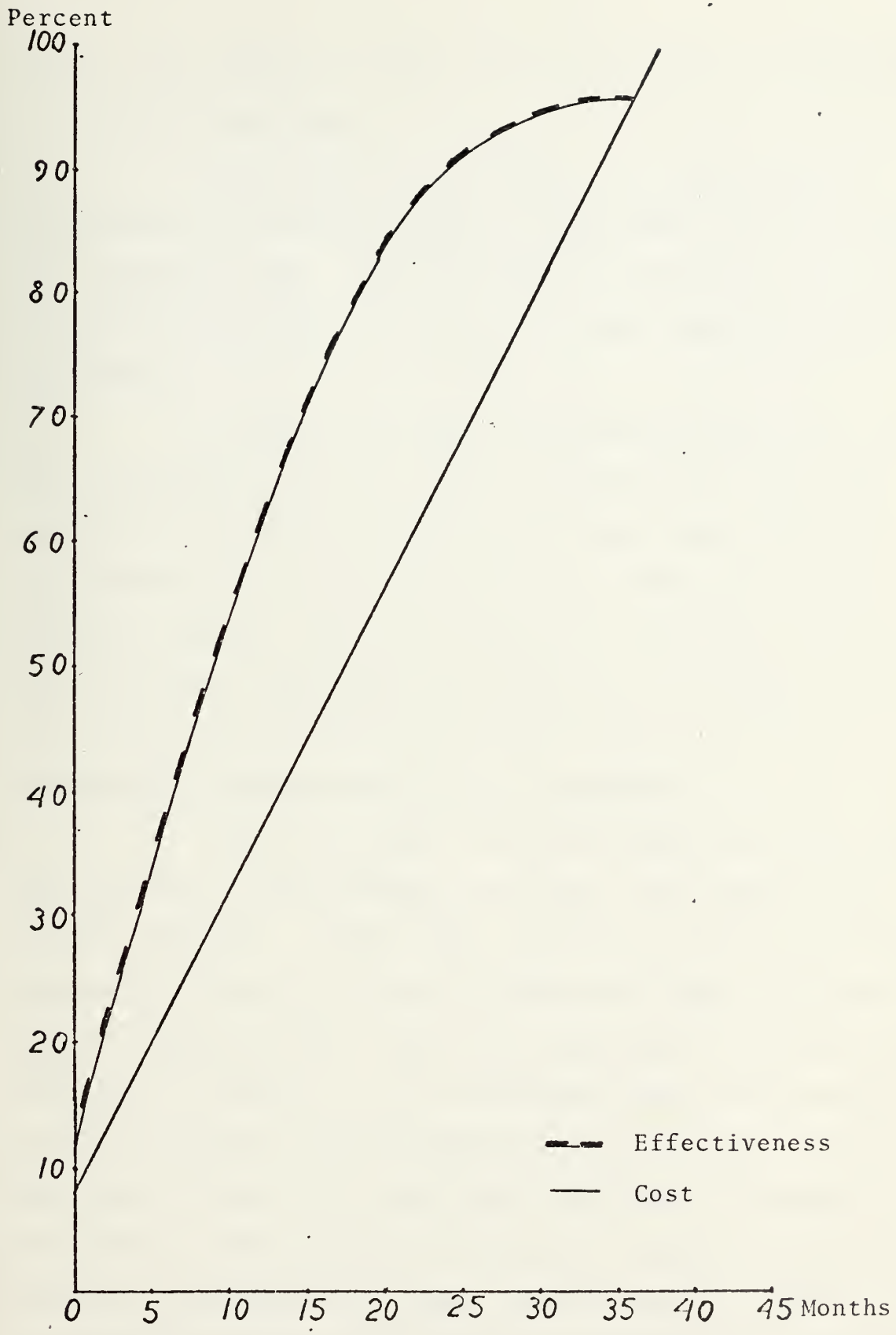


Figure 4. Rate of Effectiveness and Cumulative Cost Compared over Time. Both effectiveness and cost are in terms of 36 months.

within the personnel system. This cost is due to seasonality of of quality accessions.

This model is the result of a study by the Department of the Army, Office of the Deputy Chief of Staff for Personnel [20]. Its objective is to minimize the impact of accession seasonality and at the same time improve personnel readiness.

The model proposes the implementation of a 3-1/2 year enlistment term in lieu of a 3-year and 4-year term. By reducing the effect of training lead time there would be a synchronising of entries to and losses from the enlisted trained strength. The study postulated that if a mixture of 75% 3-year and 25% 4-year enlistees was to continue a 3-1/2 year contract term would require 4-5% fewer accessions to maintain the same enlisted trained strength.

With the current economic conditions recruiting has attracted a much higher percentage than normal of high school graduates. (High school graduate enlistee seasonality compared to non-high school enlistees was shown in Figure 5). On the assumption that high school graduate enlistees would continue to increase, it was postulated that fluctuations in trained strength would be dampened if a 3-1/2 year contract was used in lieu of 3- and 4-year contracts. To support this view Figure 6 was supplied showing the trained strength deviation over time with an assumed 180,000 yearly accessions and a mix of 75% 3-year and 25% 4-year contract people compared to a 3-1/2 year contract with the same constraints.

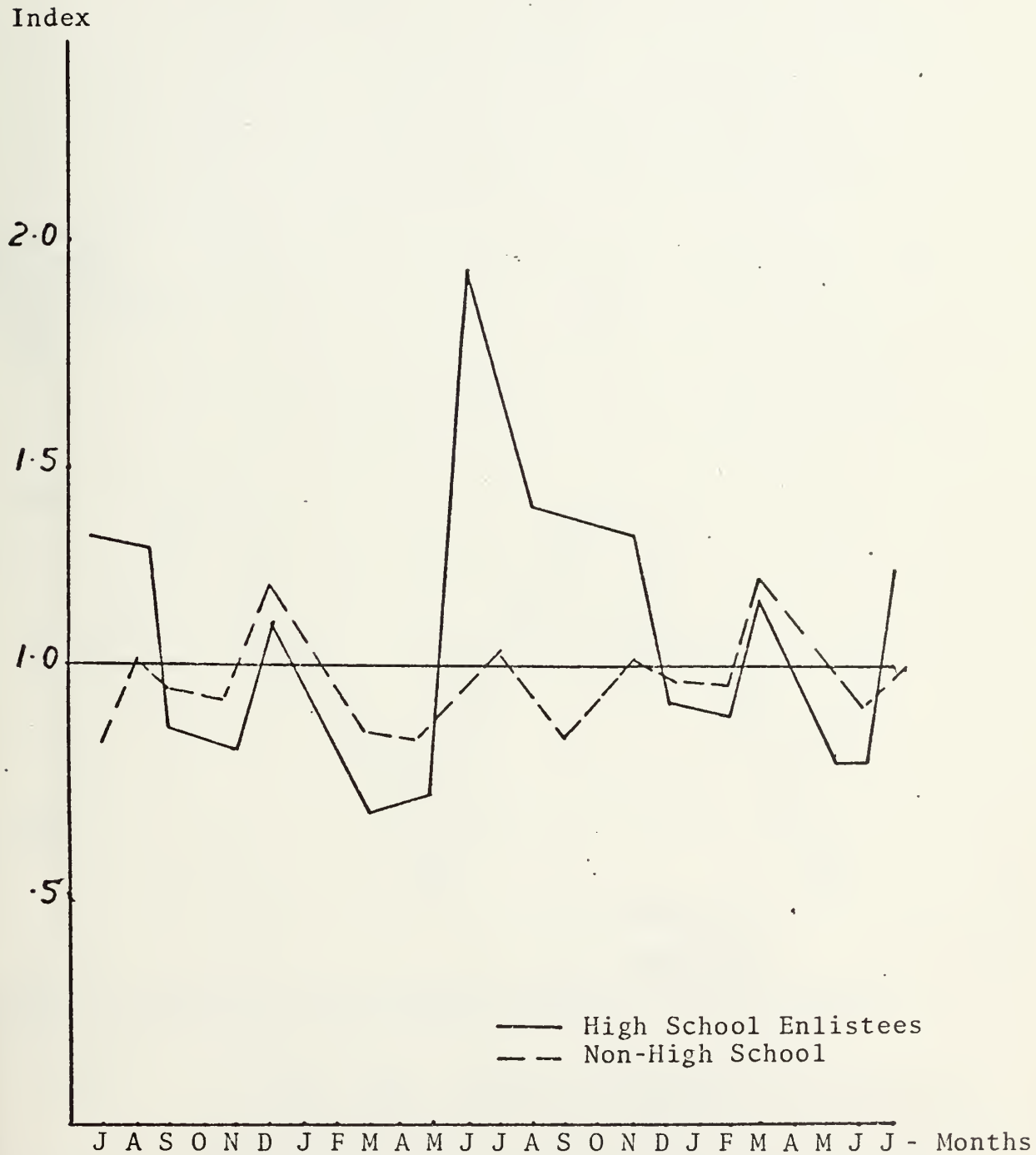


Figure 5. The Seasonality of Non-Prior Service Accessions of High School Graduates Compared to Non-High School Enlistees. The index value 1.0 represents the average monthly accession during the year.

Source: Department of the Army, Office of the Deputy Chief of Staff for Personnel [20]

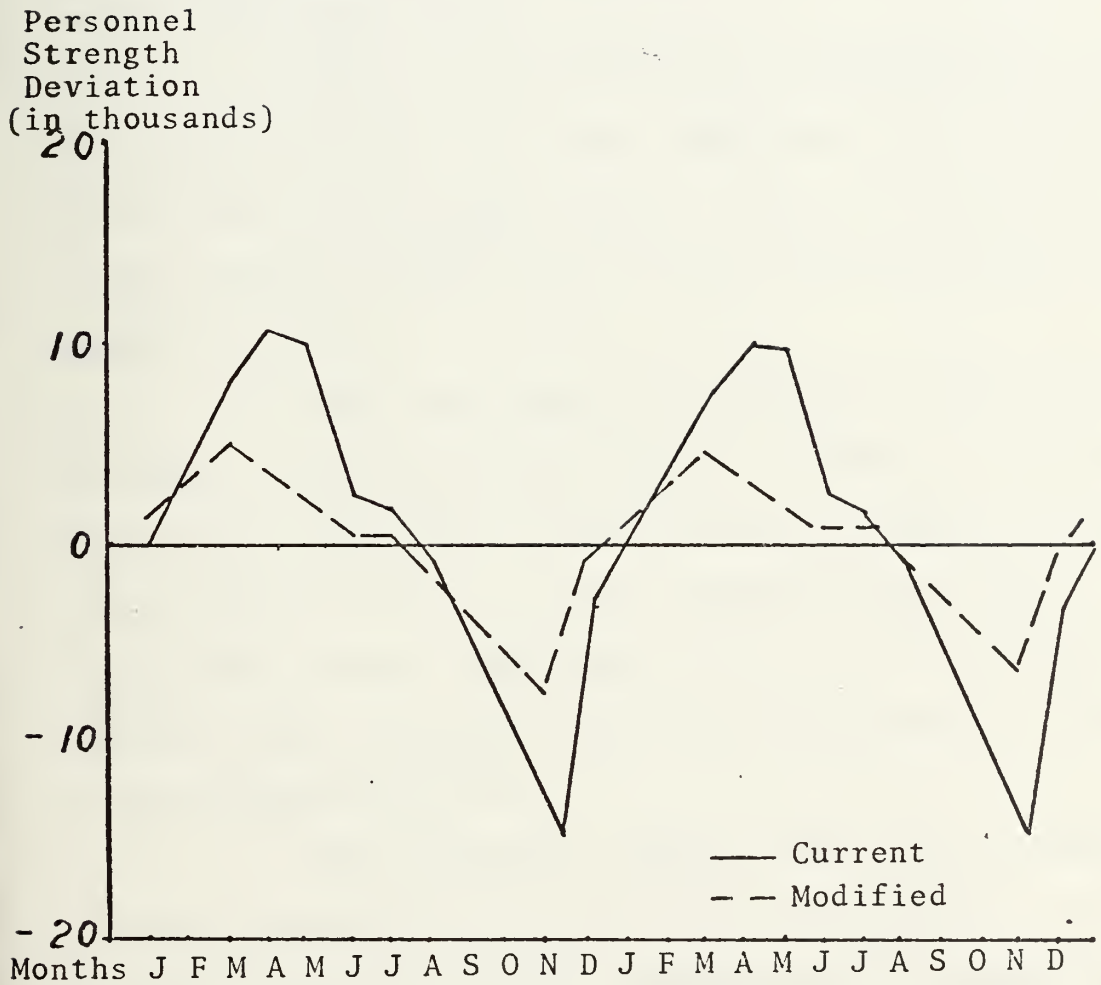


Figure 6. Current Trained Strength Deviation with a 3- and 4-Year Contract Compared to the Modified Deviation Resultant upon Implementation of the 3-1/2-Year Contract for First-Term Enlistees. Both current and modified curves incorporate maximum high school accession seasonality.

Source: Department of the Army, Office of the Deputy Chief of Staff for Personnel [20]

The change to a 3-1/2 year contract would seem to reduce the number of recruits needed to maintain enlisted trained strength while at the same time making it easier to schedule the use of training assets. The average enlistee who did not reenlist would spend about five months being trained, 36 months as a trained usable asset and the last month being discharged.

The average availability of manpower has been calculated [20] for the 3-year enlistee as 24.5 months; the 3-1/2 year, 27.9 months; and the 4-year, 30.4 months, based on the assumption that the enlistee serves the first six-months' training.

This study emphasizes the fact that there is no one way to view contractual terms. To reduce the fluctuation in training lead time and under or over usage of training assets the use of a 3-1/2 year contract would assist. However, sensitivity has not been conducted on a 1-1/2 or 2-1/2 year contract due to Congress restraints placed upon a minimum 3-year contract period.

The conclusion remains that initial enlistment contract terms are very much subject to the social and economic climate. Whereas a 2-year contract may be the most cost-effective for obtaining a return from the individual, it may be uneconomic from the viewpoint of maximizing force viability or utilizing training facilities available. The ultimate decision must be to determine the priorities of what is to be maximized or minimized.

Ignoring enlistment for the moment, we can ask the same questions about reenlistment models, is there an optimum contract period or is a contract needed at all? The parameters differ greatly from initial enlistment, since costs of recruiting, equipping and training are assumed recouped. The only cost is a variable one which is based on the pay and allowances and the accumulation of retirement rights. Similarly, consideration of accession seasonality and training asset underutilization becomes of little consequence.

2. Reenlistment Model Discussion

If we acknowledge that the prime military age group population is going to decline in future years, then it is obvious that greater consideration must be devoted to ensuring that present enlistees reenlist when their contract expires.

The need is generally to create an environment sufficiently enticing to the first-term enlistee that he will feel sufficiently motivated to reenlist. This environment could be possibly made more attractive still by use of a more flexible contract term; at very worst it may enable the reduction or removal of some of the more costly reenlistment incentives presently used.

Most reenlistment models do not concern themselves directly with what the length of the reenlistment term should be. They do, however, look at factors that influence an individual to reenlist--i.e., predicter variables of rank and pay and reenlistment bonus [21, 22].

If the rank of the individual is increased when nearing the end of his first term enlistment the probability is that he will be more likely to reenlist. Similarly, if the reenlistment bonus is attractive enough it will normally appeal to the individual. What has not been considered is the possibility of reducing both or all of these incentives and instead using contractual length as the only variable.

Concepts discussed in most reenlistment quantitative studies assume a set term of reenlistment. Removing this barrier might drastically change the probabilities of an individual reenlisting.

III. DISCUSSION OF ENLISTMENT AND REENLISTMENT OPTIONS

Enlistment contracts have been an accepted part of the military establishment since time immemorial. The need for review of this field at this time is due to present day enlistees' qualms over contractually binding themselves for long periods of time and consequently losing their individualism and fate control vis-a-vis their civilian industry counterparts.

The answer to the question of contract period must have an awareness of two distinctly different pressure areas, one basically psychological and the other economic.

The psychological pressure areas are represented by firstly, the attitudes of the individual towards his position in society and his rights and obligations relative to his civilian counterpart and secondly, his legal position with respect to the validity of contractual law application. Although the present position is still clouded, what emerges from the existing case law is that sufficient precedents exist to show that an enlistee or reenlistee, if influenced into a course of action by a promise (particularly with financial implications) made by a recruiter or counsellor, has a basis for a cause of action for either enforcement of the terms or rescission of the contract. This has not drastically altered the balance of power in the recruiting function. It has, however, resulted in a greater degree of circumspection by many recruiting practitioners

and can only assist the military image by recognizing the contractual rights of the individual.

Recognition of the development of the individual also comes under the psychological heading. Vocational career choice is not a one time affair as many have previously thought. Its sheer fluidity and many faceted character necessitates that with the present enlistee population, whose average age is 18-20 years, all options are kept open. Movement between trades and skills would greatly encourage continuing service, and the costs would be negligible relative to the present losses.

Quantitative analysis ignores the whims of the individual for greater fate control or the prospect of stultifying an individual's development by locking him into a set term contract. Rather, the view must be what term of contract most benefits the military at least cost.

By examining the two models under enlistment it is obvious that there is no one answer to this question. Depending on viewpoint the model will incorporate the variables considered most relevant to the person concerned, concommitantly many assumptions must be made that are inapplicable in other contexts.

The models proved useful in that they focussed on the variety of returns for cash outlay that could be anticipated. As such, the use of a singular contract for all employees, regardless of skill acquired, would appear inequitable.

The use of a 3-1/2 year contract in Model II was attempting to maximize a totally different set of criteria to that

in Model I. The use of this hypothetical 3-1/2 year contract supposedly overcame the underutilization of training facilities and smoothed trained strength manpower. Detriments of increased time in fixed contract were not considered. It is wise to couch this optimism with the acknowledgement that the economic environment of 1975 is conducive to this type of experimentation. A similar experiment in the early 1970's or even possibly in the late 1970's may be doomed.

The question remains unanswered as to the optimality of contract time. If the contract period stays at 3 or 4 years then potential enlistees will be lost, possibly higher recruiting costs incurred to attract the additional non-motivated numbers (including larger incentives) and the increased probability of having non-reenlistment due to lack of vocational flexibility. Conversely, if it is reduced below two years the rate of return of effectiveness relative to cost would still be increasing, thus encouraging quantitative analysts to urge a longer contract period.

If the period of contract is increased to 3-1/2 years, as Model II recommends, accession seasonality may be reduced and training assets better used. However, will the increased terms functionally cause additional costs to be incurred to gain enlistees? Only a longitudinal study varying these elements in a relatively stable economic climate will provide the necessary answers.

The problems facing reenlistment are a follow-on from initial enlistment. If reenlistment figures can be increased,

the pressure to obtain accessions and the question of effectiveness and use of training facilities would be purely academic.

The attitude adopted was that increased reenlistments could reduce the cost to the military of training new recruits. Of main interest were the variables identified as relevant to reenlistment, these being: rank and diversified training, length of enlistment, dependents, region of the country, and mental group.

One study [22] suggested that by concentrating on 4-year enlistees the proportion of reenlistees will be higher overall; consequently, there could be a reduction in new enlistees. This argument assumes that the number of 4-year initial enlistees will be equal to the 2- or 3-year enlistees. This could be a false premise and consequently the figures postulated could prove quite misleading.

The use of the variable reenlistment bonus was seen as having positive effect on the numbers reenlisting and variation of this was seen as a device to influence the marginal reenlistee [21].

The attitudes of first-term enlistees due to reenlist indicated that increased incentives were not necessarily the main determinant. The need they considered was greater recognition of their performance and greater fate control. The question then is why not concentrate on the elements most nominated as relevant, in this sense an open-ended contract or one of short resignation notice?

As with initial enlistment, only a longitudinal study will provide the answer; however, there appears far less grounds for set contracts on reenlistment when one considers the accumulating retirement benefit cost to the military.

IV. CONCLUSION

The models and studies all helped to focus upon the problem of what is the optimum contract period. The result remains that "there is no one answer."

The question of how much weighting should be attributed to the individual's attitudes and his desire for greater fate control or the new legal status which recognizes his rights and objections must be contrasted to the overwhelming desire to design contractual terms to enable the government to maximize its return on outlay.

The streams diverge with the attitudinal approach and cost effective approach becoming further apart the more they individually concentrate on their own goals. The only reasonable answer must be a blending of the two with adequate concessions made by each.

Even with the cost effective studies it cannot be said that they are uniform. The question remains what is to be maximized or minimized and what cost is acceptable to the government--i.e., nonreturn of training costs or lack of manpower readiness, to quote but two examples.

It remains obvious that continued inflexible long term contracts, i.e., 3-4 years, could deter prospective enlistees or reenlistees. On the other hand, variable terms, or ones of considerably shorter duration, could prove a boon to short-term enlistment and reenlistment figures. The question

is whether the result will prove of value to the maintenance of a viable military force and secondly, can it be justified on a cost basis?

The answer must be one of further longitudinal studies using the variables discussed. The evidence would all point to a minimum term of two years. This base figure may provide the necessary starting element in a future study with a matrix of population psychology, economic conditions, defense posture and cost effectiveness considerations as elements in the analysis. The result could show a reasonable set of alternatives for differing situations.

APPENDIX A: QUESTIONNAIRE I

QUESTIONNAIRE TO EVALUATE EFFECTIVENESS
OF THE INFANTRY SOLDIER

MILITARY COST ANALYSIS IS SUFFERING A LACK OF INFORMATION ON THE EFFECTIVENESS OF THE NEW INFANTRY SOLDIER.

THIS QUESTIONNAIRE IS DESIGNED TO ELICIT YOUR OPINION AS TO THE INDIVIDUAL SOLDIER'S EFFECTIVENESS OVER A PERIOD OF TIME.

PART I RATER'S PERSONAL BACKGROUND

Circle all answers where provided.

1. HOW LONG HAVE YOU BEEN IN THE ARMY?

1 - 3 years

4 - 6 years

7 - 9 years

10 - 12 years

13 - 15 years

Other

2. ARE YOU AN OFFICER?

YES NO

3. IF AN OFFICER, HAVE YOU SPENT ANY PERIOD OF YOUR SERVICE IN THE MILITARY AS AN ENLISTED MAN?

YES NO

4. WHAT IS YOUR PRESENT RANK:

E6 01

E7 02

E8 03

5. DO YOU CURRENTLY COMMAND/CONTROL INFANTRY TROOPS:

YES NO

6. IF NO TO QUESTION FOUR, HAVE YOU COMMANDED/CONTROLLED INFANTRY TROOPS WITHIN THE LAST:-

0 - 1 year

1 - 2 years

2 - 3 years

Other (If Other, do not complete remainder of questionnaire).

PART II EFFECTIVENESS SECTION

Questions in this section apply only to soldiers who have completed BCT, AIT but have had no previous unit experience.

7. HOW LONG, ON THE AVERAGE, HAD EACH INFANTRY SOLDIER BEEN IN BCT, AIT BEFORE HE ARRIVED IN YOUR UNIT?

0 - 4 weeks	25 - 28 weeks
5 - 8 weeks	29 - 32 weeks
9 - 12 weeks	33 - 36 weeks
13 - 16 weeks	37 - 40 weeks
17 - 20 weeks	41 - 44 weeks
21 - 24 weeks	45 - 48 weeks

EFFECTIVENESS OF THE SOLDIER IS DEFINED AS:-

a) Physically fit.

b) Able to perform all skills taught in BCT and AIT.

c) Functions efficiently as a unit member.

8. DEFINE THE LEVEL OF "MINIMUM" EFFECTIVENESS ACCEPTABLE FOR THE NEWLY ARRIVED SOLDIER (Circle response applicable)

Physical Condition:

Totally Unfit	Slightly Unfit	Satisfactorily Fit	Above Average Fitness	Excellent Fitness

Skills Taught in BCT and AIT:

Unable to perform most skills taught	Unable to perform some skills taught	Performs most skills taught	Performs all skills taught	Performs all skills taught in a highly efficient manner

Unit Membership:

Unable to perform most unit functions	Unable to perform some unit functions	Performs most unit functions effectively	Performs all unit functions effectively	Performs all unit functions excellently

9. DEFINE THE LEVEL OF "AVERAGE" EFFECTIVENESS FOR THE NEWLY ARRIVED SOLDIER (Circle response applicable)

Physical Condition:

Totally unfit	Slightly unfit	Satisfactorily fit	Above average fitness	Excellent fitness

Skills Taught in BCT and AIT:

Unable to perform most skills taught	Unable to perform some skills taught	Performs most skills taught	Performs all skills taught	Performs all skills taught in a highly efficient manner

Unit Membership:

Unable to perform most unit functions	Unable to perform some unit functions	Performs most unit functions effectively	Performs all unit functions effectively	Performs all unit functions excellently

10. UPON ARRIVAL AT YOUR UNIT HOW EFFECTIVE WAS THE AVERAGE SOLDIER RELATIVE TO HIS FINAL EFFECTIVENESS AS AN INFANTRY SOLDIER IN YOUR UNIT?

0 - 10%	51 - 60%
11 - 20%	61 - 70%
21 - 30%	71 - 80%
31 - 40%	81 - 90%
41 - 50%	91 - 100%

11. HOW LONG IN MONTHS, FROM THE TIME OF ARRIVAL OF THE INFANTRY SOLDIER TILL HE WAS FULLY EFFECTIVE AS A SOLDIER IN YOUR UNIT?

(Write in) ..... Months

12. FURTHER TO QUESTION 11, WHERE PREVIOUSLY A SINGLE FIGURE FOE EFFECTIVENESS IN MONTHS WAS ASKED, NOW SHOW YOUR ESTIMATE OF THE INDIVIDUALS'S EARLIEST AND LATEST TIMES TILL HE BECAME A FULLY EFFECTIVE SOLDIER IN YOUR UNIT.

EFFECTIVENESS	
	Earliest ..... Months
	Average ..... Months
	Latest ..... Months

13. USING THE RESPONSES GIVEN IN QUESTIONS 10 AND 11, SHOW THE LEVEL OF "AVERAGE" EFFECTIVENESS ATTAINED MONTHLY.

MONTHS	%	MONTHS	%	MONTHS	%
0	.....	9	.....	18	.....
1	.....	10	.....	19	.....
2	.....	11	.....	20	.....
3	.....	12	.....	21	.....
4	.....	13	.....	22	.....
5	.....	14	.....	23	.....
6	.....	15	.....	24	.....
7	.....	16	.....		
8	.....	17	.....		

PART III GENERAL

14. DO YOU THINK THAT HAVING A FIXED MILITARY TERM OF SERVICE IS TO THE BENEFIT OF THE MILITARY?

Y E S N O

15. PLEASE COMMENT ON YOUR ANSWER TO QUESTION 14:

APPENDIX B: QUESTIONNAIRE II

QUESTIONNAIRE TO EVALUATE EFFECTIVENESS
OF THE INFANTRY SOLDIER

THIS QUESTIONNAIRE IS DESIGNED TO ELICIT YOUR OPINION AS TO THE INDIVIDUAL SOLDIERS EFFECTIVENESS OVER A PERIOD OF TIME.

This Questionnaire was prepared by Captain P. J. Spence of the Royal Australian Army Ordnance Corp as part of his study for a Master of Science in Management at the Naval Postgraduate School, Monterey.

Course No: MN0810

Course Title: Thesis, titled Contractual Employment--What are the Alternatives?

Second Reader Approval .....

Chairman of Department Approval .....

PART I RATER'S PERSONAL BACKGROUND

Circle all answers where provided.

1. HOW LONG HAVE YOU BEEN IN THE ARMY?

   1 - 3 years

   4 - 6 years

   7 - 9 years

   10 - 12 years

   13 - 15 years

   Other

2. ARE YOU AN OFFICER:

   YES NO

3. IF AN OFFICER, HAVE YOU SPENT ANY PERIOD OF YOUR SERVICE IN THE MILITARY AS AN ENLISTED MAN?

   YES NO

4. WHAT IS YOUR PRESENT RANK?

   E6 O1

   E7 O2

   E8 O3

5. DO YOU CURRENTLY COMMAND/CONTROL INFANTRY TROOPS?

   YES NO

6. IF NO TO QUESTION FIVE, HAVE YOU COMMANDED/CONTROLLED INFANTRY TROOPS WITHIN THE LAST:

0 - 12 months

13 - 24 months

25 - 36 months

Other (If Other, do not complete ramainder of questionnaire).

PART II EFFECTIVENESS SECTION

Questions in this section apply only to soldiers who have completed BCT, AID but have had no previous unit experience. (Answers to this question could refer to your past unit experience and not necessarily your present unit which could be newly formed).

THIS QUESTION APPLIES ONLY TO NEWLY ARRIVED SOLDIERS IN YOUR UNIT.

7. HOW LONG, ON THE AVERAGE, HAD EACH INFANTRY SOLDIER BEEN IN BCT, AIT BEFORE HE ARRIVED IN YOUR UNIT?

0 - 4 weeks	25 - 28 weeks
5 - 8 weeks	29 - 32 weeks
9 - 12 weeks	33 - 36 weeks
13 - 16 weeks	37 - 40 weeks
17 - 20 weeks	41 - 44 weeks
21 - 24 weeks	45 - 48 weeks

EFFECTIVENESS OF THE SOLDIER IS DEFINED AS:-

a) Physically fit.

b) Able to perform all skills taught in BCT and AIT.

c) Functions efficiently as a unit member.

8. DEFINE THE LEVEL OF "AVERAGE" EFFECTIVENESS OBSERVED FOR THE NEWLY ARRIVED SOLDIER (Circle response applicable)

Physical Condition:

Slightly unfit	Satisfactorily fit	Average fitness	Above average fitness	Excellent fitness

Skills Taught in BCT and AIT:

Unable to perform most skills taught	Unable to perform some skills taught	Performs most skills taught	Performs all skills taught	Performs all skills taught in a highly efficient manner

Unit Membership:

Unable to perform most unit functions	Unable to perform some unit functions	Performs most unit functions effectively	Performs all unit functions effectively	Performs all unit functions excellently

9. DEFINE THE LEVEL OF "MINIMUM" EFFECTIVENESS ACCEPTABLE FOR THE NEWLY ARRIVED SOLDIER (Circle response applicable)

Physical Condition:

Slightly unfit	Satisfactorily fit	Average fitness	Above average fitness	Excellent fitness

Skills Taught in BCT and AIT:

Unable to perform most skills taught	Unable to perform some skills taught	Performs most skills taught	Performs all skills taught	Performs all skills taught in a highly efficient manner

Unit Membership:

Unable to perform most unit functions	Unable to perform some unit functions	Performs most unit functions effectively	Performs all unit functions effectively	Performs all unit functions excellently

10. UPON ARRIVAL AT YOUR UNIT HOW EFFECTIVE WAS THE AVERAGE SOLDIER RELATIVE TO HIS FINAL EFFECTIVENESS AN AN INFANTRY SOLDIER IN YOUR UNIT?

0 - 10%	51 - 60%
11 - 20%	61 - 70%
21 - 30%	71 - 80%
31 - 40%	81 - 90%
41 - 50%	91 - 100%

11. HOW LONG IN MONTHS, FROM THE TIME OF ARRIVAL OF THE INFANTRY SOLDIER TILL HE WAS ACCEPTABLY EFFECTIVE IN THE PARTICULAR JOB ASSIGNED WITHIN THE UNIT:

(Write in) ..... Months

WHAT WAS THE PERCENTAGE EFFECTIVENESS OF THE INDIVIDUAL IN HIS JOB AT THIS TIME? ..... % (This may never be 100% as the individual will be continually learning).

12. FURTHER TO QUESTION 11, WHERE PREVIOUSLY A SINGLE FIGURE FOR EFFECTIVENESS IN MONTHS WAS ASKED, NOW SHOW YOUR ESTIMATE OF A GROUP'S EARLIEST AND LONGEST TIMES TILL IT BECOMES FULLY EFFECTIVE.

EFFECTIVENESS	
	Earliest ..... Months
	Average ..... Months
	Longest ..... Months

13. USING THE RESPONSES GIVEN IN QUESTIONS 10 AND 11, SHOW THE NUMBER OF MONTHS REQUIRED BY THE INDIVIDUAL TO REACH EACH LEVEL OF EFFECTIVENESS SET OUT BELOW:

%	MONTHS	%	MONTHS
10	.....	60	.....
20	.....	70	.....
30	.....	80	.....
40	.....	90	.....
50	.....	100	.....

PART III GENERAL

14. DO YOU THINK THAT HAVING A FIXED MILITARY TERM OF SERVICE IS TO THE BENEFIT OF THE MILITARY?

Y E S N O

15. PLEASE COMMENT ON YOUR ANSWER IN QUESTION 14:

LIST OF REFERENCES

1. Mockraitis, J. and Johnson, D., An Analysis of Military Unionization in Austria, Denmark and Sweden, Masters Thesis, Air Force Institute of Technology, 1972.

2. Rand, Ayn, The Romantic Manifesto, New York, New America Library, 1971.

3. Korman, A. K., "Expectancies as Determinants of Performance," Journal of Applied Psychology, v. 55, pp. 218-222, 1971.

4. American Institutes for Research Report AIR-32201-6/74-TR-3, A Study of Experimental Incentives as an Influence on Enlistment Intention, by R. L. Frey, Jr., A. S. Glickman, A. K. Korman, B. E. Goodstadt and A. P. Romanczuk, June 1974.

5. American Institutes for Research Report AIR-32201-3/73-TR, Navy Career Motivation Programs in an All-Volunteer Condition, by A. S. Glickman, B. E. Goodstadt, A. K. Korman, A. P. Romanczuk, March 1973.

6. American Institutes for Research Report AIR-32201-6/73-TM-1, An Exploratory Study of Enlistment Incentives among Junior College Students, by A. K. Korman, B. E. Goodstadt, A. S. Glickman and A. P. Romanczuk, June 1973.

7. Human Resources Research Organization, Attitudes of Youth Toward Military Service, Gilbert, 1972.

8. Levinson, H., "Asinine Attitudes Towards Motivation," Harvard Business Review, v. 51, pp. 70-86, 1973.

9. Hughes, E. C., Men and Their Work, Chicago, The Free Press, 1958.

10. Weitz, J., "Job Expectancy and Survival," Journal of Applied Psychology, v. 40, pp. 245-247, 1956.

11. Graduate School of Arts and Sciences, The George Washington University TR-1122, Demographic Trends and Naval Manpower Policies, by C. T. Stewart, June 1973.

12. American Institute for Research Report AIR-32201-6/74-TR-4, Reenlistment Incentives--More is not Better in the Fleet Either, by R. L. Frey, Jr., B. E. Goodstadt, A. K. Korman, A. P. Romanczuk and A. S. Glickman, June 1974.

13. Super, D., The Psychology of Careers, New York, Harper and Row, 1957.

14. Roe, A., The Psychology of Occupations, New York, John Wiley and Sons, 1956.

15. Osipow, S. H., Theories of Career Development, New York, Appleton, Century and Crofts, 1968.

16. Super, D., "Self Concepts in Vocational Development," Journal of Vocational and Educational Guidance, v. 8, pp. 13-29, 1961.

17. Caplow, T., The Sociology of Work, New York, McGraw-Hill, 1954.

18. Headquarters United States Army Weapons Command Special Projects Division, Procurement and Production Directorate, Learning Curve Fundamentals, by E. R. Hudgins, June 1966.

19. Fitts, P. M. and Posner, M. I., Human Performance, Belmont, California, Brooks and Cole Publishing Co., 1967.

20. Department of the Army, Office of the Deputy Chief of Staff for Personnel, Memorandum, Three and a Half-Year Enlistment: A Concept Paper, 9 June 1975.

21. Center for Naval Analyses Report CRC269, The Effects of Reenlistment Bonuses, by S. D. Kleinman and W. F. Shughart, September 1974.

22. Graduate School of Arts and Sciences, The George Washington University TR-120, Manpower Policy and Reenlistment Rate, by S. E. Haber, T. Ireland and H. Solomon, June 1974.

23. Herzberg, F., The Motivation to Work, 2d ed., New York, John Wiley and Sons, 1959.

24. Janowitz, M., The Professional Soldier, Glencoe, Illinois, The Free Press, 1960.

25. Lipsett, L., Rodgers, F., and Kentner, H., Personnel Selection and Recruitment, Boston, Allyn and Bacon, 1964.

26. Maslow, A. H., Motivation and Personality, 2d ed., Harper and Row, 1970.

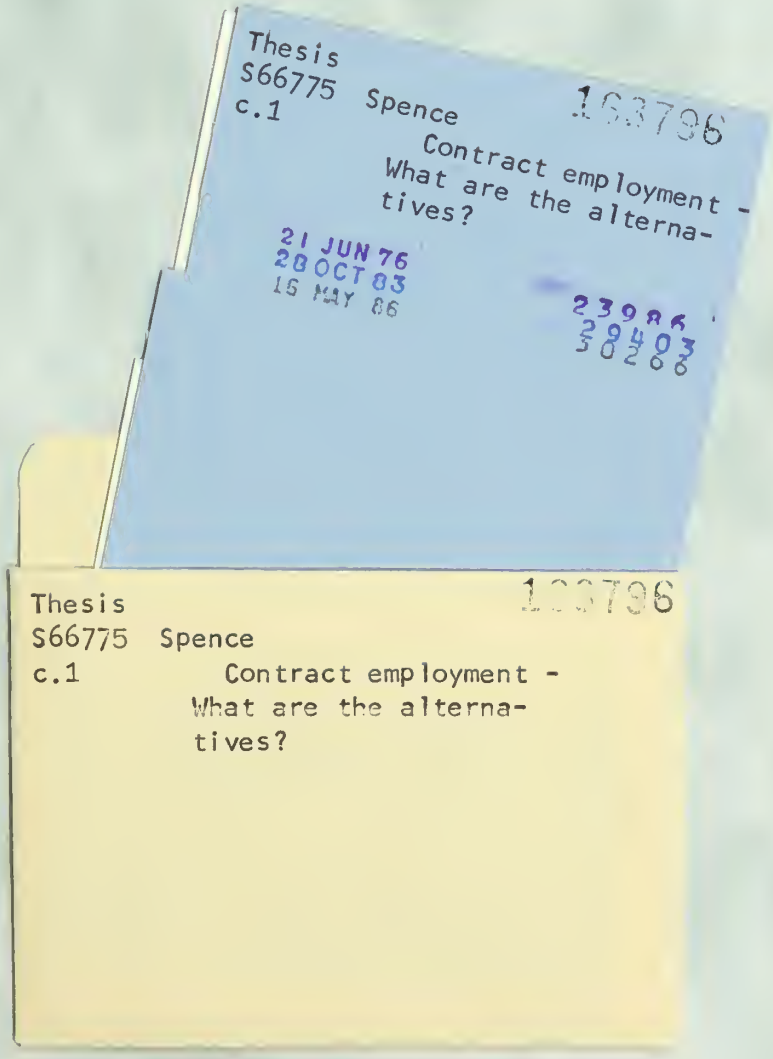
27. Marvin, P., The Right Man for the Right Job at the Right Time, The Executives Guide to Tapping Top Talent, Homewood, Illinois, Dow, Jones and Irwin, 1973.

28. Vroom, V. H., Work and Motivation, New York, John Wiley and Sons, 1964.

29. Yoder, D., Personnel Principles and Policies, 2d ed., Englewood Cliffs, New Jersey, Prentice Hall, 1959.

INITIAL DISTRIBUTION LIST

		No. Copies
1.	Defense Documentation Center Cameron Station Alexandria, Virginia 22314	2
2.	Library, Code 0212 Naval Postgraduate School Monterey, California 93940	2
3.	Department Chairman, Code 55So Department of Operations Research and Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
4.	Professor J. K. Arima, Code 55Aa Department of Operations Research and Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
5.	Capt. P. J. Spence 35A The Avenue Newport Sydney, N.S.W., Australia	1
6.	Australian Army Attache 1601 Massachusetts Ave., N.W. Washington, DC 20036	2
7.	Lt. Col. A. G. Owens, AAPC 1 Psychological Research Unit Chancery House 485 Bourke Street Melbourne, Victoria 3000 Australia	1
8.	Lt. J. D. Finnerty, USNR, Code 53Fi Department of Operations Research and Administrative Sciences Naval Postgraduate School Monterey, California 93940	1



Thesis
S66775 Spence
c.1
Contract employment -
What are the alterna-
tives?
193796